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REVISED EDITION

DEBORAH B. HAARSMA & LOREN D. HAARSMA

ORIGINS



CHRISTIAN
PERSPECTIVES
ON CREATION,
EVOLUTION,
AND
INTELLIGENT
DESIGN

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Grand Rapids, Michigan

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Finally we are grateful to the editors and staff at Faith Alive Christian Resources for inviting us to write this book, and for their unflagging commitment to aid Christians who want to learn about creation, design, and evolution. We are honored to be a part of this project.

—Deborah B. Haarsma and Loren D. Haarsma

PREFACE TO THE REVISED EDITION

The first edition of this book, *Origins: A Reformed Look at Creation, Design, and Evolution* (2007), was commissioned for a target audience of Christians familiar with Reformed theology and tradition. This new edition is intended for a broader audience. The content is substantially unchanged. In various places we have modified the text, corrected a few mistakes in the original edition, and removed most “insider” references to the Reformed tradition. We moved the topic of fine-tuning from chapter 10 to chapter 7, added answers to some common questions to chapter 13, and added a new chapter on worship. We have also updated the lists of Additional Resources to include recent books and articles.

Many Christians consider the topic of origins “dangerous waters”—if you sail in the wrong direction, you could run your intellect aground or, worse yet, shipwreck your faith. Our goal is to help you navigate those waters. In some parts, especially the early chapters, we steer through broad channels where Christians of many traditions generally have consensus. In other parts, especially the later chapters, we venture into rocky areas where Christians disagree with each other, sometimes sharply. Rather than trying to steer you in one set direction, we chart out several paths that Christians take while pointing out some of the hazards along the way.

January 2011

—Deborah B. Haarsma and Loren D. Haarsma

INTRODUCTION

Creation. Evolution. Design. These words mean different things to different people, and they tend to provoke arguments. The issues they represent run close to some of our deepest questions:

- ▶ Does God exist?
- ▶ How does God relate to this universe?
- ▶ How did we get here?
- ▶ Who are we?

Among Christians, opinions on creation, evolution, and design vary widely. We've seen this variety as we've traveled around the country to speak to churches, to pastors, and to Christian students at colleges and universities. The Christians we meet share a common belief about *who* created the universe. But they believe very different things about *how* God created the universe.

Some Christians we know are eager to see scientific proof to support their belief that God created everything. Others believe that there can't be any scientific proof, because if we have proof then we don't need faith. Some feel that the Bible is only about spiritual issues and is irrelevant to science. Others claim that the Bible tells us scientific information, including the age of the earth and the beginning of life. Some Christians believe that the earth was created just a few thousand years ago, and they are suspicious when they hear about the Big Bang theory. They

dislike the very word *evolution* and wonder how any Christian could believe that we evolved from apes. Some Christian students have even been warned that they will be in danger of losing their faith if they listen to scientific evidence for evolution. But other Christians feel that believing in the Bible is perfectly compatible with believing that the earth is old and that God used evolution to create life; they wonder why Christians are still wasting their time arguing about these issues. Yet other Christians are somewhere in between. They have been taught that it's acceptable to believe in an old earth, but they're not so sure about biological evolution, and they wonder whether gaps in evolution show that an intelligent designer must have brought about life on the earth.

Religion and Science in Conflict?

Some people see these arguments about creation, design, and evolution as a conflict with just two sides:

- ▶ Atheists on one side who try to use science to disprove religion.
- ▶ Religious believers on the other side who reject the work of scientists.

If there are only two sides to choose from, then believing what science says means rejecting God, and believing in God means rejecting science. Which do you choose: science or religion?

Of course it's not that simple. The issues around creation, evolution, and design are more complex—and more interesting.

Throughout this book we will use the word *science* to refer collectively to the natural sciences such as physics, astronomy, chemistry, geology, biology, and so on. Social sciences such as sociology, political science, and economics are not the focus of this book.

Debate the Weather?

To illustrate why the debate about origins isn't simply a matter of science versus religion, imagine living in a culture where there is a similar debate about the weather. The Bible clearly teaches that God governs the weather. Many Bible passages proclaim that God causes rain and drought (see Deut. 11:14-17; 1 Kings 8:35-36; Job 5:10; 37:6; Jer. 14:22). Writers of Deuteronomy, the Psalms, and Jeremiah refer specifically to storehouses of rain and snow (see Deut. 28:12, 24; Ps. 135:7; Jer. 10:13).

What causes the rain? Most of us were taught that water evaporates from the ground level, rises to where the air is cooler, and condenses into water droplets that form clouds. We learned how cold fronts and warm fronts and low pressure systems bring rain. When we watch meteorologists on television, we hear that scientists now use sophisticated computer models to help them understand and predict the weather a few days in advance. Their ability to understand meteorology is especially important for farmers, airline pilots, military personnel, and coastal residents. Every year scientists develop increasingly accurate computer models of the weather.

Now imagine that debates arise about what should be taught in schools about the weather. Imagine that prominent scientists write popular books about meteorology that state, "From our scientific understanding of the causes of wind and rain, it is clear that no divine being controls the weather." Imagine that a professional organization of science teachers writes a set of guidelines that state, "Students must learn that all weather phenomena follow from natural causes; weather is unguided and no divine action is involved." Meanwhile, other people insist that these scientific explanations of rain and wind must be wrong because the Bible clearly teaches that God governs the weather. These people write books and give public speeches saying, "Atheists have invented their godless theories about evaporation and condensation. But we can prove that their so-called scientific theories are false and that the Bible is true." They go to churches and teach, "If you believe what these scientists are saying about the causes of wind and rain, then you've abandoned belief in the Bible." They

petition school boards and courts to require that science classrooms also teach their “storehouses” theory of the weather as an alternate explanation to evaporation and condensation.

If you lived in a world with that sort of debate going on, would you be content to see it simply as a conflict between science and religion? Would you be willing to agree wholly with one side or the other?

More Than Two Options

Fortunately, we don’t have such debates about what causes the weather. The majority of Christians say that when it comes to the weather, both science and the Bible are correct. God governs the weather, usually through the scientifically understandable processes of evaporation and condensation. And the majority of atheists today would also agree that having a scientific explanation for the weather, by itself, neither proves nor disproves the existence of God. So there are no court battles about what science classrooms should teach about the weather.

Debates about creation, evolution, and design have some similarities to the above example, but in many ways they are more difficult. The questions about how to interpret Scripture are more challenging, and these debates raise more theological issues. A good place to start in making sense of these debates is to remember that more than two options exist.

About This Book

The purpose of this book is to lay out a wider variety of options and to examine what both the Bible and the natural world can teach us about these options. We will explore in depth the issues of origins and consider areas where Christians generally agree with each other *and* areas where Christians disagree. Our goal is not to convince you that one particular opinion must be correct, but neither will we merely list a wide variety of opinions without doing any analysis. We will

- ▶ summarize what we believe God’s *Word* teaches about origins when it is studied using sound principles of interpretation.

- ▶ summarize what we believe God's *world* can reliably reveal about origins when it is studied using sound scientific methods.
- ▶ distinguish between scientific theories that are well established and have a great deal of data supporting them and scientific theories that are more tentative and speculative.
- ▶ look at the range of opinions that Christians hold about origins and discuss some of the pros and cons of each in light of what we can learn from God's Word and God's world.

This book often refers to Christians as *we/us* because it is written primarily for people who believe that the Bible has been inspired by God and who choose to live according to its teaching. The primary audience is people who believe that God created the universe and that a scientific study of God's world and a careful study of God's Word both have something to teach us about origins. We will not try to *prove* these beliefs, since we expect that most readers will share these assumptions. If you don't share these assumptions, this book at least will give you some insight into people who do.

The first chapter of this book looks at the relationship between the study of God's Word and God's world. Rather than placing theology over science or science over theology, we will explore the sovereignty of God over both.

Chapter 2 argues that the practice of science is consistent with a Christian worldview and that Christians can work with scientists of other worldviews without compromising their Christian beliefs. We then consider God's governance in four areas: explainable natural events, unexplainable natural events, supernatural miracles, and random events.

Chapter 3 examines three methods (experimental, observational, and historical) used to gain scientific knowledge about God's world. Historical science has proven to be a reliable method

for learning about natural history. The chapter closes with a discussion of the limits of science.

Chapter 4 describes science and theology as the human interpretations of God's two revelations, nature and Scripture. We consider factors that influence these human interpretations and discuss when these interpretations can be considered reliable. As a case study, we consider Galileo's conflict with the church regarding the motion of the earth through space. Galileo's story holds several important lessons for understanding today's conflicts.

Chapters 5 and 6 examine what nature and Scripture are telling us about the age of the earth. Chapter 5 describes the geological evidence for age, as well as four *concordist* interpretations of Genesis 1. Chapter 6 describes five *non-concordist* interpretations of Genesis 1 and then discusses all of these interpretations in light of the principles of biblical interpretation set forth in chapter 4.

Chapter 7 looks at what astronomers are learning about the history of the universe. We'll describe the evidence that the universe is incredibly vast, with a long, dynamic history. It is old, but the evidence for the Big Bang shows that it is not *infinitely* old; it had a beginning in time. Many scientists today are saying that the fundamental laws of nature have been "fine-tuned" for life to exist and develop around stars.

Chapter 8 sorts out the various meanings of the word *evolution* and takes a closer look at the atheistic worldview of *evolutionism*. It defines the *progressive creation* and *evolutionary creation* positions and discusses some theological issues they raise.

Focusing on plant and animal evolution, chapter 9 describes the scientific evidence from fossils, anatomy, geography, and genetics in support of common ancestry and the theory of evolution. It concludes with an analysis of three Christian positions on origins in light of this evidence.

Chapter 10 discusses how the term *Intelligent Design* is being used in today's debates over origins. It compares fine-tuning arguments to Intelligent Design arguments and considers in detail the question of how biological life became so complex.

Chapter 11 summarizes the scientific evidence regarding human origins and discusses relevant theological topics, such as original sin and what it means that humans are made in the image of God. Chapter 12 considers five scenarios for Adam and Eve and when they lived, examining the pros and cons of each scenario in light of the scientific and theological issues raised in chapter 11. The Appendix lists over a dozen positions on creation, design, and evolution origins that are consistent with belief in God.

Chapter 13 summarizes many of the questions Christians ask about origins and discusses a few questions in particular: proofs of God in nature, human significance, and worship in the context of origins. It concludes with some advice for how Christians can live and work together despite their differing views on creation, evolution, and design.

In Chapter 14 and throughout this book you'll find places where we pause to praise the Creator for the wonder and beauty of the world he has made. Chapter 14 discusses worship and its importance in the midst of these debates.

STUDY TIPS

Designed for individual or small group study, each chapter of this book includes

- ▶ an in-depth look at each topic.
- ▶ questions for reflection or discussion.
- ▶ a list of suggested resources for further reading and study.

If you plan to use this book in a study group, the chapters can be combined into six, four, or even three sessions. For six sessions, we recommend grouping as follows: chapters 1-2, 3-4, 5-6, 7, 8-10, and 11-12. For four sessions, you can group chapters 1-4, 5-7, 8-10, and 11-12. For three sessions, group chapters 1-4, 5-7, and 8-12. The Introduction, chapter 13, chapter 14, and the Appendix can be used as supplements.

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If you are new to leading a discussion group, here are some suggestions:

- ▶ Encourage everyone to read before coming so that all will be informed.
- ▶ Start the meeting by asking people to share one or two things they found particularly interesting in the reading. Depending on your group, that may be all you need to get the discussion started.
- ▶ Allow everyone to share their views, but if one or two people begin to dominate the discussion you can direct conversation to another aspect of the reading or invite someone who has been quiet to share his or her thoughts.
- ▶ If conversation lags or bogs down in one topic, use the questions at the end of the chapter to get the discussion moving (look them over ahead of time to pick the questions you think will work well with your group).
- ▶ When necessary, remind people not to say negative things about other Christians (don't suggest that others are stupid or lacking in faith); critique ideas, not people.
- ▶ End with a song, Scripture reading, or prayer to praise God for his handiwork and remind everyone of our unity in Christ.

If you or members of your study group wish to pursue the topic of origins even further, you'll find a collection of over forty related articles on our website (www.faithaliveresources.org/origins). Throughout the chapters in this book, you'll find sidebars directing you to specific articles on our website as they relate to the topic at hand.

Don't worry if it's been a while since you last sat in a science classroom—we expect that most readers are not scientists or theologians. Although the reading will get a bit technical in places, we'll try to avoid using too much jargon.

It is our hope that your study of this book will give you a greater understanding of the complex topic of origins and a deeper sense of awe for our great God.

About the Authors

I grew up loving science and math, as well as music and reading. My teachers at school and at church encouraged my academic interests. In the evangelical church we attended I was taught a young earth interpretation of Genesis 1, but this view was not emphasized as an essential article of faith. In my public high school evolution was taught in biology class, but, fortunately, not in an antireligious way.

I attended Bethel College in St. Paul, Minnesota, majoring in physics so that I could combine my love of science with my love of math. It was amazing to discover how complex calculations could accurately match what happened in real-world experiments. I learned that science is founded on a Christian worldview in that scientific investigation relies on the regularity of natural laws, which in turn rely on God's faithful governance. One day I heard a chapel speaker talk about the need for more Christians at universities to bring the gospel to academics and a Christian worldview to academic culture. I felt God's call that day to be a Christian voice among scientists and to be a scientific voice within the church. I still follow this call, eager to bridge the gap and show both scientists and Christians that the two are not in opposition.

In graduate school my general interest in physics focused into a particular interest in astrophysics. I earned a PhD at the Massachusetts Institute of Technology, doing research on galaxies and the expansion of the universe. As my research project turned to the question of the age of the universe, I realized that I needed to learn more about how Christians understood issues of age and origins. I read several authors and discussed the issue with fellow Christian graduate students in my InterVarsity chapter. I came to understand that a high view of Scripture can agree with a deep respect for science and what it tells us about God's world.

At a scientific conference I attended as a graduate student, I heard an astronomer speak about the importance of sharing the latest astronomical results with the general public. Scientists should not only report their findings to each other but to all the children and adults who would like to know more about the

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universe—particularly if those scientists are funded by taxpayer dollars. I realized that, as good as that reason was, I had a deeper and better reason for telling people about astronomy. It is the very handiwork of God. As I learn about physics in the universe, it is not enough for my own heart to rise in praise. I need to tell it to others so that they too can praise God for his glory declared in the heavens. In my teaching at Calvin College and in this book, God has given me more opportunities to tell of his handiwork.

—Deborah B. Haarsma

I have always loved learning science. I remember reading books on astronomy when I was still in the early grades of elementary school. And I have always loved learning theology. Since I grew up in the Christian Reformed Church and attended Christian schools from kindergarten through college, I had many opportunities to learn theology. My earliest memory of bringing together science and theology is from a Sunday school class in middle school. The pastor talked about Scripture's teaching that God keeps all of the planets in their proper place. He also pointed out that science can explain that planets stay in their orbits because of gravity. Then he assured us that these two views are not in conflict: God created the law of gravity and uses it to keep the planets in orbit. That incident—and the Reformed theology behind it—has guided my thinking and calmed my worries over the years whenever someone claims that science and religion are in conflict. Another great help to me was a Bible class during my senior year of high school. I don't recall discussing origins or any other scientific issue in that class, but we did learn a great deal about interpreting, understanding, and applying Scripture.

Growing up, I was usually taught a young earth interpretation of Genesis; however, I don't recall any teachers or pastors insisting that this was the only right interpretation. In high school and early college classes I began to learn the scientific evidence related to the age and history of the earth. I was aware that some Christians mistrusted this science, but I knew from my studies that scientists were usually very smart and very careful. Reading what a variety

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of theologians had written about interpreting Genesis deepened my understanding. Their writings helped me to reconcile the study of God's world with the study of God's Word.

Since my graduation from Calvin College, science has been my career. I attended graduate school at Harvard University and earned my PhD in physics. Then for five years I did full-time scientific research in the exciting field of neuroscience. Neuroscience combines a biologist's study of how cells and living organisms work with a physicist's study of how atoms move and electrical signals travel.

In 1999 I returned to Calvin College to teach. Throughout my tenure there my love for both science and theology has grown. Whenever someone claims that there is a conflict between science and Christian theology on some particular issue, I feel called, compelled, and eager to explore that issue. Again and again over the years I have found, by carefully studying the science, philosophy, and theology surrounding the issue, that no contradiction really exists. Not only can science and theology be reconciled, but each can serve to increase our understanding of the other.

—Loren D. Haarsma

CHAPTER 1

GOD'S WORD AND GOD'S WORLD

What is God like? Questions like this are essentially religious and not scientific. “What is the mass of a carbon atom?” Questions like this are essentially scientific and not religious. It might seem that the simplest way to avoid conflict between religion and science is to keep them completely separate from each other. A number of atheists and agnostics have written in favor of this idea. They think that people should look to their religion or personal philosophy to answer questions about moral meaning and personal value—questions that science *cannot* answer, and they ask in return that religion defer to science on questions about the natural world—questions that science *can* answer. It’s a tempting idea.

But it is not always possible to keep science and religion in separate compartments. Some discoveries of science inevitably raise religious questions. Here are just a few examples:

- ▶ When astronomers study the vastness of the universe, we can’t help but wonder about the significance of tiny humans in such a large universe.
- ▶ When biologists study organisms that cause disease, we ponder the causes of suffering.
- ▶ When ecologists study the great variety of plants and animals in this world, we reconsider our responsibility to take care of this world.

- ▶ When physicists discover powerful new energy sources, we debate whether they should be used for war.

Scientific discoveries like these certainly affect our beliefs and decisions about moral and religious questions.

Most people, Christians or atheists, are not content to hold competing and contradicting beliefs in separate compartments. We don't want to have one set of beliefs when we study the natural world, another set when we decide how to vote, a third set when we decide how to spend our money, and a fourth set for church. We want all the parts of our lives to flow from a unified, consistent set of beliefs.

Most importantly, Christians cannot simply separate science from religion because the Bible proclaims that God is sovereign over every part of life. The God who created the planets and the stars is also the God who inspired the Bible and who is personally revealed in human history. The God who made the sky and the ocean is also the God who commands us to act out of love rather than selfishness. The God who made the plants and animals is also the God who redeems us after we disobey his commands. The God who gave us the ability to study the world scientifically is also the God who guides us with the Holy Spirit as we seek to understand his written revelation. We cannot separate our study of God's Word from our study of God's world because both come from and point us toward the same God.

CHRISTIANS AGREE AND DISAGREE

Christians in Agreement

When Christians discuss creation, evolution, and design, it is easy to focus immediately on areas of controversy and disagreement. We think it is important to start by pointing out certain areas in which nearly all Christians agree and which we strongly affirm in this book. Christians generally agree about the fundamentals

of God, God's Word, and God's world in the five areas described below.

► **God created, sustains, and governs this universe.**

This truth is confirmed in the first line of the Apostles' Creed, one of the ecumenical creeds of the church that many Christians recite every week: "I believe in God, the Father almighty, creator of heaven and earth." Christians believe that God created all things from nothing, bringing them into being through his Word, his Son (John 1:1-3). God continually sustains the whole universe, governing all creatures according to his providential care.

► **The God who created this world also reveals himself to humanity.**

God has revealed himself at various times and in multiple ways throughout history, including the written Scriptures and the Incarnation. As it says in the first verses of the book of Hebrews,

In the past God spoke to our ancestors through the prophets at many times and in various ways, but in these last days he has spoken to us by his Son, whom he appointed heir of all things, and through whom also he made the universe. The Son is the radiance of God's glory and the exact representation of his being, sustaining all things by his powerful word. After he had provided purification for sins, he sat down at the right hand of the Majesty in heaven.

—Hebrews 1:1-3, NIV.

► **The God who created this world is also our Redeemer.**

We belong to God because he created us, but when humanity turned from God he bought us back. He redeemed us through the incarnation, life, suffering, death, and resurrection of Jesus Christ.

► **The Bible is authoritative and sufficient for salvation.**

God inspired its human authors and ensured that the Bible truthfully teaches what he intends. The Holy Spirit testifies in our hearts that the Bible's message is from God, not merely human writing. Christians accept the sufficiency of the Bible for establishing our core beliefs and practices; all that we need to know for salvation is taught there. God certainly can use various means—including the natural world—to teach us new things. But these new things should be compatible with, not contradictory to, what God teaches in Scripture.

► **God is sovereign over all realms of human endeavor and has given human beings special abilities and responsibilities. Theologian Cornelius Plantinga puts it this way:**

God's creation extends beyond the biophysical sphere to include the vast array of cultural possibilities that God folded into human nature. . . . God's good creation includes not only earth and its creatures, but also an array of cultural gifts, such as marriage, family, art, language, commerce, and (even in an ideal world) government. The fall into sin has corrupted these gifts but hasn't unlicensed them. The same goes for the cultural initiatives we discover in Genesis 4, that is, urban development, tent-making, musicianship, and metal-working. All of these unfold the built-in potential of God's creation. All reflect the ingenuity of God's human creatures—itsself a superb example of likeness to God.

—Cornelius Plantinga, *Engaging God's World*, 2002.

Applying this idea to the natural sciences, we conclude that God has graciously given humans the ability and responsibility to study the natural world systematically. As with all human endeavors, we do it imperfectly. We must seek to do it as God's imagebearers, in gratitude for God's gifts.

Christians in Disagreement

Christians have always agreed about *who* created everything, but in the last few decades they have often disagreed about *how* God created everything. These disagreements are over two basic questions:

- ▶ **As we study God's Word, what is the best way to understand passages that talk about God's acts of creation?**
- ▶ **As we study God's world, what can we reliably conclude that it tells us about its history?**

Some Christians describe themselves as *young-earth creationists*. They believe that the best interpretation of the book of Genesis is that the earth is only a few thousand years old and was shaped by a global flood. Young-earth creationists hold a range of views about how to interpret Scripture, the extent to which scientific data indicates a young universe, and the extent to which it indicates at least an appearance of long history.

Other Christians describe themselves as *old-earth creationists*. Some believe that in the best interpretation of Genesis 1, the events on each day actually describe several long epochs of scientific history. Others believe that the best interpretation of the book of Genesis does not imply anything about the age of the earth one way or the other and that drawing conclusions about the age of the earth from Scripture is reading into it something it was never intended to teach.

Some old-earth creationists describe themselves as *evolutionary creationists*. They believe that the best understanding of the scientific data—in conjunction with the best interpretation of Scripture—implies that God governed and used evolutionary processes in the unfolding of creation. Other old-earth creationists describe themselves as *progressive creationists*. They believe that science and Scripture both indicate that God used not only natural processes but also some miracles along the way, particularly in the history of life. Arguments for *Intelligent Design* are usually, though not always, used to support versions of progressive creation.

One purpose of this book is to examine this range of young-earth and old-earth beliefs and the various ways in which Christians think about creation, design, and evolution. We will define these terms and explore that range of beliefs in more detail in chapters 5, 6, and 8, as well as in the Appendix.

Because of these disagreements among Christians, a number of churches, denominations, and organizations have affirmed that Christians can and do hold a variety of views on origins—each motivated by a sincere desire to be faithful to God and to Scripture—and that a range of views falls within the bounds of Christian belief. (See the notes at the end of this chapter for more examples of positions taken by various denominations and Christian organizations.)

LISTENING TO BOTH THE WORD AND THE WORLD

Whenever Christians discuss origins, sooner or later someone asks the question “Are you going to let science tell you how to read the Bible, or are you going to let the Bible tell you how to do science?” Instead of asking whether theology should dictate science, or science theology, we suggest asking the following questions:

- ▶ Is it ever appropriate for Christians to allow what we learn from the study of creation to affect how we interpret Scripture?
- ▶ Is it ever appropriate for Christians to allow what we learn from the study of Scripture to affect how we interpret creation?

We think the answer to both questions is yes but that we can do each in good ways and bad ways.

Scripture’s Influence on Interpretation of Nature

An inappropriate use of the Bible is to read *into* Scripture things it was never intended to teach. While Scripture is authoritative and

sufficient to teach us everything we need to know to be saved, it is not intended to be a reference book covering all human knowledge. The Bible has things to say about how we should farm, but it is not a farming manual. The Bible has things to say about how we use our money, but it is not an economics text. The Bible has things to say about the natural world, but it is not a science text. We wouldn't expect a scientist to use the Bible to figure out how an electronic circuit responds to signals, just as we wouldn't expect a plumber to use the Bible to figure out what size pipe to use in a house under construction.

But Scripture can influence the interpretation of the natural world in appropriate ways. For example, the Bible teaches us that God can interact with the natural world. Scientists are trained to study the natural world and try to explain as much as they can in terms of natural processes. If a scientist spent his whole life only looking to science for answers, he might be tempted to conclude that every event must *always* have a purely natural explanation. Scripture offers a correction here. Scripture teaches that God can and does sometimes work outside of normal, natural processes. God can do miracles. Thus, a Christian scientist must be open to the possibility that some events might not have scientific explanations.

The Bible teaches us important lessons about the natural world that science alone cannot discover. Scientists have discovered that human bodies are made of the same types of atoms as plants and rocks and dirt; nevertheless, the Bible teaches that humans have a special place in creation. Scientists can explain how spring, summer, autumn, and winter are caused by the angle of earth's rotation relative to its orbit around the sun; the Bible teaches that the seasons follow each other because of God's faithful, continuing governance.

Science's Influence on Interpretation of Scripture

Is it appropriate to allow science to influence the interpretation of Scripture? Some influences would *not* be appropriate. We shouldn't use science as an excuse to ignore parts of the Bible that

seem to conflict with science. Scientific reasoning alone should not drive how we interpret the Bible. Science should not push us to interpret one part of the Bible in ways that conflict with the clear teachings of other parts of the Bible.

But some influences can be appropriate. Things that we learn from studying God's world can help us to better understand some parts of God's Word. Think of this in a broader context. All of life's experiences have the potential to alter and improve our understanding of Scripture. For example, if we mistakenly interpreted Scripture to justify a "health and wealth" gospel (the premise that God blesses us with riches and good health so long as our faith is strong and we don't sin too much), then God might use life's experiences of suffering and loss, as well as the wisdom of other Christians, to correct our mistaken interpretation. Similarly, God can use scientific encounters with his world to help us better understand parts of Scripture.

Science can be helpful in cases where the Bible itself is ambiguous and open to multiple interpretations. Think about ordinary events like sunrise and sunset, regular patterns of rainfall, and seeds growing in a field of tall corn. Are these events that happen all the time, brought about miraculously by God? Or does God bring about these events using natural laws and ordinary processes, without the need for his miraculous intervention each time? Many Bible passages speak about God establishing night and day, about God bringing rainy and dry seasons, about God blessing the land with good harvest. It would be easy to conclude from these passages that God uses special, miraculous action to cause these everyday events.

But it is also easy to conclude from these passages that God brings those events to pass by means of natural processes, by laws he has established and sustains (see Jer. 33:25) rather than by special, miraculous acts. Scripture alone doesn't always make clear which interpretation is correct. The Bible was written long before modern science studied these questions systematically. So it's not surprising that the authors of Scripture were very interested in proclaiming that it is God—the God of Abraham and

Sarah, Isaac and Rebekah—who sustains and controls the natural world, but they were not particularly interested in explaining *how* God does it.

Today, however, the question of *how* does interest us. We are curious about how God causes day and night and makes plants grow, so we systematically study God's world to figure it out. What we learn from these studies can settle questions about how to interpret some particular passages of the Bible. Science does not overthrow the idea that God governs sunrise and sunset, rainfall and harvest. It does, however, inform us that God can govern these things using regular, understandable processes such as the earth's rotation, evaporation and condensation, and the processes of biology and biochemistry. This information, this life experience, guides us in choosing between two acceptable interpretations of the Bible. Science shows us that God governs these things without the need for special, miraculous action.

Rather than placing theology over science or science over theology, remember that God is sovereign over both. The Holy Spirit can guide us to new wisdom and understanding of both. If God uses Scripture to teach something about the natural world, then Christians must listen. If God uses our experiences, including facts learned from science, to improve our understanding of Scripture, then Christians must listen. Science should not cause us to throw out part of the Bible or to interpret it in a way that conflicts with the rest of Scripture. On the other hand, if a passage can be interpreted in several ways, all of which are consistent with the rest of the Bible, then God might use science to help us reach a better understanding of that passage. God created the world, and God inspired Scripture. Our goal should be to listen to what God is telling us from both sources.

Getting BEYOND Controversy

The Apostles' Creed begins "I believe in God, the Father almighty, creator of heaven and earth." It does not go on to specify what we must believe about *how* God created. It is important for every Christian to believe *that* God created the whole universe.

Origins

Establishing a firmly held belief about *how* God created the world is not fundamental to our saving relationship with him. Yet because God has given us curious minds and an amazing world, many of us want to learn more about the *how*, and some of us make it our vocation.

In spite of the ranges of interest in and opinions on origins within the body of believers, we feel that every Christian should

- ▶ take both God's Word and God's world seriously. Simply setting aside one in favor of the other would mean ignoring part of God's revelation.
- ▶ avoid slandering each other. Whenever one person makes claims about the motives of another person with whom they disagree, that person can become guilty of bearing false witness. For example, some claim that Christians who believe in an old earth have diluted their faith in order to earn respectability in the eyes of secular scientists and that they are on a slippery slope that will lead them to throwing out the whole Bible. Others claim that Christians who believe in a young earth are proudly stubborn and anti-intellectual and that they have made an idol of their own particular interpretation of the Bible. Such claims might be true in a few extreme cases, but they do not explain what truly motivates most Christians to hold their particular beliefs on origins.
- ▶ avoid setting up unnecessary stumbling blocks to the gospel. Saint Augustine, who lived many centuries before the modern debates about origins, evidently faced a similar problem in his day. He wrote,

Usually, even a non-Christian knows something about the earth . . . and this knowledge he holds to as being certain from reason and experience. Now, it is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics; and we should take all means to prevent such an embarrassing situation, in which people show up vast ignorance in a Christian and laugh it to scorn. The shame is not so

much that an ignorant individual is derided, but that people outside the household of the faith think our sacred writers held such opinions, and, to the great loss of those for whose salvation we toil, the writers of our Scripture are criticized and rejected as unlearned men.

—Augustine (A.D. 354-430),
The Literal Meaning of Genesis.

- ▶ encourage Christian children to pursue science, not fear it. Some young Christians have been blessed by God with an interest in and ability to do science, but they have been warned that scientists make things up to try to disprove God and that their own faith will be at risk if they study science. Instead these young Christians should be encouraged to respond to God's call to a career in science and the task of studying God's handiwork.

Finally a Christian's primary response to God's world should not be debate but an overflowing of praise and worship of the Creator. We see this in Psalm 29, where the biblical author looks at God's world and responds with praise. Imagine the psalmist, perhaps sitting on a hill in northern Israel or standing on the shores of Lebanon, watching a storm move over the land north of Israel. He looks out on the Mediterranean Sea, watches the clouds building, and hears distant thunder. A huge thunderstorm blows onto shore with gusts of wind in the forests of Lebanon, thunder echoing off Mount Hermon (also called Sirion), and lightning cracking over the wilderness of Kadesh. As the storm moves off, the wind dies and the waters calm, and the poet writes,

Ascribe to the LORD, you heavenly beings,
ascribe to the LORD glory and strength.
Ascribe to the LORD the glory due his name;
worship the LORD in the splendor of his holiness.

Origins

The voice of the LORD is over the waters;
the God of glory thunders,
the LORD thunders over the mighty waters.
The voice of the LORD is powerful;
the voice of the LORD is majestic.
The voice of the LORD breaks the cedars;
the LORD breaks in pieces the cedars of Lebanon.
He makes Lebanon skip like a calf,
Sirion like a young wild ox.
The voice of the LORD strikes
with flashes of lightning.
The voice of the LORD shakes the desert;
the LORD shakes the Desert of Kadesh.
The voice of the LORD twists the oaks
and strips the forests bare.
And in his temple all cry, "Glory!"
The LORD sits enthroned over the flood;
the LORD is enthroned as King forever.
The LORD gives strength to his people;
the LORD blesses his people with peace.

Nothing in the psalm talks about *how* a thunderstorm works; there is nothing about meteorology, precipitation, cold fronts, or electrical discharges in the atmosphere. No, the psalm is all about *who*. The storm is under the Lord's control. Every aspect proclaims his authority and glory. The poet artfully uses the human experience of being caught outside in a storm—the gusts of wind, the peals of thunder, the flashes of lightning—to declare God's glory and power. The poem is also a lesson for God's people about the idol Baal, a Canaanite god believed to have been the divine power behind thunderstorms. Not so, the psalmist proudly proclaims; Israel's God, the Lord, is in control. When seen through the eyes of faith, natural wonders like thunderstorms cause us also to cry "Glory!" In a thunderstorm we *experience power*—and sense our own powerlessness. Nature stretches our imagination

of what true power might be, so that we have a deeper understanding of the almighty power of God.

QUESTIONS FOR REFLECTION AND DISCUSSION

1. In the Introduction (pp. 11-21) we've shared a bit about our own life experiences and how they've impacted our interests and beliefs about God's world and Word. What have been your experiences around the issues of creation, evolution, and design? What motivates you to learn more about how God created the world?
2. How did you feel about science when you were in school? Did you love it? Fear it? Were you bored by it?
3. Have you heard two or more Christians disagreeing with each other about origins? What were their positions? Were their disagreements cordial or contentious?
4. What other issues can you think of on which all Christians agree on certain basic principles but disagree on particulars?
5. In what situations have you experienced Christians bearing false witness against the motives of other Christians on the topic of origins?
6. The authors ask whether it's ever appropriate for Christians to allow what we learn from the study of creation to affect how we interpret Scripture and vice versa. How do you answer these questions?
7. What are some ways in which the Holy Spirit can guide us into a better understanding of Scripture? What are some ways the Holy Spirit can keep us from unsound interpretations of Scripture?

ADDITIONAL RESOURCES

Educational resources:

Leunk, Thea. *Fossils and Faith*. Grand Rapids, Mich.: Faith Alive Christian Resources, 2005.

This four-week course, designed for high school youth, provides an overview of multiple views on origins that adults will also find helpful. View a sample copy at www.faithaliveresources.org.

Vogel, Jane. *Walk With Me Year 3, Unit 5: Discover Creation and Science*. Grand Rapids, Mich.: Faith Alive Christian Resources, 2006.

This unit introduces middle school students to origins issues, such as how the Bible and science answer different sorts of questions.

More on positions of various denominations and Christian organizations:

Barry, A. L. "What about Creation and Evolution?" www.lcms.org/graphics/assets/media/LCMS/wa_creation-evolution.pdf. Barry discusses the position of the Lutheran Church Missouri Synod that favors young-earth creationism.

Dembski, B., and K. Miller, P. Nelson, B. Newman, D. Wilcox. "Commission on Creation, American Scientific Affiliation," 2000. www.asa3.org/ASA/topics/Evolution/commission_on_creation.html. "The American Scientific Affiliation is a fellowship of men and women in science and disciplines that relate to science who share a common fidelity to the Word of God and a commitment to integrity in the practice of science." Recognizing the diversity of views among Christians, they have deliberately decided not to take a stand endorsing one particular view of origins but have drafted a statement that recognizes general areas of agreement and specific areas of disagreement among Christians.

National Center for Science Education “Statements from Religious Organizations.” www.ncseweb.org/resources/articles/7445_statements_from_religious_org_12_19_2002.asp. This site gives position statements of several religious organizations that favor an old-earth position and the theory of evolution.

National Public Radio, *Taking Issue*. “Evolution and Religious Faith,” 2005. www.npr.org/takingissue/20050803_takingissue_origins.html. Statements on evolution from leaders of three Christian denominations, as well as Muslim and Jewish leaders.

When it comes to the history of the universe, many believe that science and faith are mutually exclusive. But in this revised version of *Origins*, physics professors Loren and Deborah Haarsma explore what God's Word *and* God's world teach us about creation, evolution, and intelligent design.

Clearly explaining the science, the authors focus on areas where Christians agree. They also present the strengths and weaknesses of areas where Christians differ.

Origins helps you develop a deeper understanding of the origins of the universe and sort out your own views on faith and science. Small group discussion questions follow each chapter.

"The Haarsmas approach this very controversial topic with a perfect mix of scientifically and biblically accurate information, theological depth, intellectual modesty, and a charitable spirit toward views they do not share themselves. Pastors, laypeople, and scientists will all find much to value here."

Edward B. Davis
Distinguished Professor of the History of Science,
Messiah College

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